

REMARKS

Claims 1-5 are pending. Minor formatting changes have been made to claims 1 and 2. Claims 4 and 5 have been added as supported by original claim 1 and the specification at page 1, lines 5-9, page 2, lines 5-8 and the Example. These amendments are non-narrowing and do not add new matter.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Issues under 35 U.S.C. §112, first paragraph

The Examiner has rejected claims 1-3 under 35 U.S.C. §112, first paragraph as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. In particular, the Examiner notes that a microorganism (*Trichosporon loubieri* Y1-A of deposit No. KCTC 18079P) is required to practice the invention.

Applicants respectfully traverse and submit that *Trichosporon loubieri* Y1-A was original purified and deposited into Korean Collection for Type Cultures (hereinafter 'KCTC') by Dr. YUM, Kyu-Jin on February 26, 2001 with deposit No. KCTC 18079P. The deposit No. KCTC 18079P was converted to International deposit No. KCTC 10876BP by filing a 'statement in the case of an original deposit' under Budapest Treaty on December 2, 2005. Attached is the converted receipt of original deposit and viability statement.

Additionally, Applicants respectfully submit that the specific strain will be irrevocably and without restriction or condition released to the public upon issuance of the patent.

Accordingly, this issue is moot. Reconsideration and withdrawal thereof are respectfully requested.

Issues under 35 U.S.C. §103(a)

The Examiner has rejected claims 1-3 under 35 U.S.C. §103(a) as being obvious over KR 2002084756A (KR) in view of Romaine et al (US 4,803,800), Kristensen et al (US 5,807,583) and Hince (US 2002/0090697A1).

Applicants respectfully traverse.

The present invention relates to a microbial material comprising a mixture comprising a microorganism and culture filtrate capable of degrading oil and toxic chemicals being at least one selected from the group consisting of *Trichosporon loubieri* Y1-A of deposit No. KCTC 18079P, *Trichosporon cutaneum*, and white-rot fungi living upon the surface of wood, lipophilic powder being at least one selected from the group consisting of natural wax, synthetic wax, beeswax and waste candle, and a microbial nutrient. In one embodiment, the microbial nutrient comprises saccharide and soybean flour. Moreover, in an additional embodiment of the invention, the mixture comprises 1 ~ 10 % by weight of lipophilic powder, 0.1 ~ 1 % by weight of saccharide and 0.01 ~ 0.1 % by weight of soybean flour based on the weight of the microorganism and culture filtrate used.

However, when the prior art is reviewed as a whole, there exists no disclosure from which those of skill in the art would be motivated to prepare the presently claimed subject matter.

KR '756 discloses *Trichosporon loubieri* Y1-A itself and a method for treatment of waste water (or waste gas) using a carrier (or filter) fixed with the microorganism. The carrier material

disclosed is one selected from the group consisting of polystyrene, polyurethane, polyether, polyethylene, polypropylene and plastics in particles type of diameter 0.5~5mm. The filter material disclosed is one selected from the group consisting of polyester, polyurethane, polyethylene, plastics, sand and expanded polystyrene in porous type. According to KR '756, the role of the carrier or filter is only for fixing the microorganism.

On the contrary, the present invention provides a lipophilic powder as a carrier. The role of the lipophilic powder includes adsorbing the oils, such as gasoline, naphtha, kerosene, bunker C oil or toxic chemicals, such as BTEX. This is in addition to fixing the microorganism (Figure 1). The adsorption of oils or toxic chemicals to the lipophilic powder increases the contact area of the oils or toxic chemicals with the microorganism, thereby maximizing the efficiency of degrading the oils and toxic chemicals.

The Examiner has attempted to cure the deficiencies of KR '756 with the secondary references, however, a review of these references when combined with the disclosure of KR '756 reveals a lack of motivation to arrive at the presently claimed subject matter.

For instance, Romaine relates to a process for cultivating filamentous fungi and focuses on a synthetic substrate for filamentous fungi. The Examiner has cited that soybean, saccharide and waxes in column 9, lines 30-45, wherein waxes is only a nutrient for cultivating filamentous fungi. However, the present invention relates to a microbial mixture for the degradation of oils or toxic chemicals. The fact that soybean and/or saccharide may be used as nutrients for microorganisms is already well known to a person having ordinary skill in the art. The present invention's important point is that a lipophilic powder easily absorbs oils or toxic chemicals. The present lipophilic powder is not a nutrient for microorganisms.

Kristensen discloses the preparation of a sustained release pellet for pharmaceuticals. Kristensen never discusses microorganisms, or the degradation of oils. The lipophilic powder (i.e., beeswax) in Kristensen has the purpose for coating pharmaceuticals, and thereby, result in sustained release effect. On the other hand, the present invention's lipophilic powder is a carrier for fixing the microorganism. There is no motivation to consult Kristensen and certainly no reasonable expectation of success in improving a microbial mixture such as KR '756.

Hince relates to a slow-release solid-chemical composition and focuses on synthetic substrates comprised of at least (1) soluble organic substrates, (2) substantially insoluble organic substrates and (3) complex inorganic phosphates. The Examiner states that powdered binders are sufficient to control the release of the microbial material mixture in a process for anaerobic bioremediation. However, there is no indication that the "binder" means a carrier for fixing microorganisms. Also, the present invention's lipophilic powder is unrelated to properties of sustained release because it is inert to the microorganism of the present invention and an insoluble material. Thus, one of skill in the art would not consult Hince unless working from a position of hindsight based on the present invention.

Accordingly, it is evident that deficiencies exist with respect to the primary reference of KR '756. Moreover, since the purpose of KR '756 is to provide a carrier for fixing the disclosed microorganism, and since the purpose of the present invention is to increase the efficiency for degrading oils and toxic chemicals, even if one or more of skill in the art were looking to improve the invention of KR '756, they would not look to the secondary references of Romaine, Kristensen and Hince. For instance, Romaine is only interested in providing a nutrient for a

synthetic mixture of fungi and Kristensen and Hince relate to sustained or slow release compositions. Accordingly, there exists no *prima facie* case of obviousness.

In view of the above, Applicants respectfully submit that the present claims define allowable subject matter. Accordingly, the Examiner is respectfully requested to withdraw all rejections and allow the currently pending claims.

If the Examiner has any questions or comments, please contact Craig A. McRobbie, Registration No 42,874 at the offices of Birch, Stewart, Kolasch & Birch, LLP.

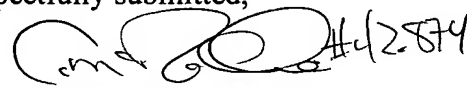
If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

Dated: July 28, 2006

Respectfully submitted,



By



Joseph A. Kolasch

Registration No.: 22,463

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road

Suite 100 East

P.O. Box 747

Falls Church, Virginia 22040-0747

(703) 205-8000

Attorney for Applicant

Attachments: (1) Receipt in the Case of an Original Deposit
(2) Viability Statement



BEST AVAILABLE COPY

BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT
OF MICROORGANISMS FOR THE PURPOSE OF PATENT PROCEDURE

INTERNATIONAL FORM

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT

Issued pursuant to Rule 7.1

TO: YIM, Kyu Jin
231-10, Moonwon-dong, Kwachon-si, Kyunggi-do 427-000,
Republic of Korea

I. IDENTIFICATION OF THE MICROORGANISM

Identification reference given by the
DEPOSITOR:

Trichosporon loubieri Y1-A

Accession number given by the
INTERNATIONAL DEPOSITARY
AUTHORITY:

KCTC 10876BP

II. SCIENTIFIC DESCRIPTION AND/OR PROPOSED TAXONOMIC DESIGNATION

The microorganism identified under I above was accompanied by:

☒ a scientific description

☐ a proposed taxonomic designation

(Mark with a cross where applicable)

III. RECEIPT AND ACCEPTANCE

This International Depositary Authority accepts the microorganism identified under I above,
which was received by it on

IV. RECEIPT OF REQUEST FOR CONVERSION

The microorganism identified under I above was received by this International Depositary
Authority on **February 26, 2001** and a request to convert the original deposit to a deposit
under the Budapest Treaty was received by it on **November 29, 2005**

V. INTERNATIONAL DEPOSITARY AUTHORITY

Name: Korean Collection for Type Cultures

Address: Korea Research Institute of
Bioscience and Biotechnology
(KRIIB)
52, Oun-dong, Yusong-gu,
Taegon 305-380,
Republic of Korea

Signature(s) of person(s) having the power
to represent the International Depositary
Authority of authorized official(s):

O.H. Hee Mock, Director
Date: **December 2, 2005**

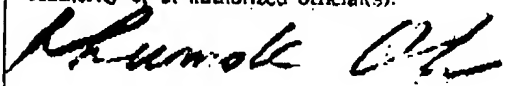


BEST AVAILABLE COPY

BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT
OF MICROORGANISMS FOR THE PURPOSE OF PATENT PROCEDUREINTERNATIONAL FORM
VIABILITY STATEMENT

issued pursuant to Rule 10.2

TO : YUM, Kyu-Jin
364-10, Moonwon-dong, Kwachon-si, Kyunggi-do 427-090,
Republic of Korea

I. DEPOSITOR	II. IDENTIFICATION OF THE MICROORGANISM
Name : YUM, Kyu-Jin Address : 364-10, Moonwon-dong, Kwachon-si, Kyunggi-do 427-090, Republic of Korea	Accession number given by the INTERNATIONAL DEPOSITARY AUTHORITY: KCTC 10876BP Date of the deposit or of the transfer: November 29 2005
III. VIABILITY STATEMENT	
The viability of the microorganism identified under II above was tested on January 19 2006 . On that date, the said microorganism was <input checked="" type="checkbox"/> X] viable <input type="checkbox"/>] no longer viable	
IV. CONDITIONS UNDER WHICH THE VIABILITY TEST HAS BEEN PERFORMED	
Culture medium : PDA Culture condition : 24°C	
V. INTERNATIONAL DEPOSITARY AUTHORITY	
Name: Korean Collection for Type Cultures Address: Korea Research Institute of Bioscience and Biotechnology (KRIBB) #52, Oun-dong, Yusong-ku, Taejon 305-333, Republic of Korea	Signature(s) of person(s) having the power to represent the International Depositary Authority or of authorized official(s):  OH, Hee-Mock, Director Date: January 28 2003